

Claims

[c1] 1. A door security apparatus adapted to assist in retaining a pair of adjacent doors in a closed state, thereby to help protect against unauthorized opening of the doors by placing the doors into an open state, comprising:

(a) a channeled extension beam having a longitudinal axis, said beam is adapted to fit over and removably engage a pair of adjacent door edges that are in the closed state; and

(b) a means for manually selectively rotatably clamping or unclamping said beam to at least one door edge, wherein the doors have increased protection against unauthorized opening, thus placing the doors into a more secured closed state, said means only manually selectively clamping or unclamping said beam from the door edge by applying an external manual force in conjunction with manual forward or manual reverse rotation respectively.

[c2] 2. A door security apparatus according to claim 1 wherein said beam is constructed of materials selected from the group consisting essentially of polyethylene, polypropylene, and polyurethane materials.

- [c3] 3. A door security apparatus according to claim 1 wherein said means for manually selectively rotatably clamping or unclamping said beam to at least one door edge is constructed of materials selected from the group consisting essentially of polyethylene, polypropylene, and polyurethane materials.
- [c4] 4. A door security apparatus according to claim 1 further comprising a plurality of said means for manually selectively rotatably clamping or unclamping said beam to at least one door edge.
- [c5] 5. A door security apparatus according to claim 1 wherein said means for manually selectively rotatably clamping or unclamping said beam to at least one door edge is a ratchet cap assembly having a threadable engagement with a beam externally threaded element adjacent to said beam with an aperture therethrough, said beam externally threaded element being substantially symmetric to a means rotational axis that is substantially perpendicular to the beam longitudinal axis, said ratchet cap assembly only having rotational axial movement along said threadable engagement with the application of the manual external force approximately parallel to the rotational axis toward said beam, an extension member and a clamping member are both in slidable ax-

ial contact with said ratchet cap being disposed through said aperture therethrough and are operational to clamp and unclamp said beam to at least one door edge.

- [c6] 6. A door security apparatus according to claim 5 wherein said ratchet cap assembly is constructed of a ratchet cap outer shell that has a rotationally releasably engagable interface with a ratchet cap insert, wherein said ratchet cap outer shell operationally accepts the manual external force and manual forward or manual reverse rotation and said ratchet cap insert having a threadable engagement with said beam externally threaded element with said ratchet cap insert being in slidable axial contact with said extension member and said clamping member.
- [c7] 7. A door security apparatus according to claim 6 wherein said ratchet cap assembly rotationally releasably engagable interface between said ratchet cap outer shell and said ratchet cap insert is constructed of a plurality of radially positioned axial protrusions disposed within said ratchet cap outer shell, each said protrusion including substantially parallel sides with one side for tightening and one side for loosening, said ratchet cap insert also includes a plurality of radially positioned axial nodes that are adjacent to said protrusions, each said node includes non parallel faces with a tightening face that is substan-

tially parallel to said tightening side and a loosening face that forms an acute angle with said loosening side, said protrusions and nodes are operational to allow free rotational movement between said shell and insert without the application of the external manual force, also to allow forward tightening manual rotation resulting in rotational engagement between said shell and insert upon the manual application of a lower external force and to allow reverse loosening manual rotation resulting in rotational engagement between said shell and insert upon the manual application of a higher external force.

- [c8] 8. A door security apparatus according to claim 1 wherein said means for manually selectively rotatably clamping or unclamping said beam to at least one door edge has indicia visibly disposed on said means that is operational to give instructions to a user for manually selectively rotatably clamping or unclamping said beam to at least one door edge.
- [c9] 9. A door security apparatus adapted to assist in retaining a door in a closed state, thereby to help protect against unauthorized opening of the door by placing the door into an open state, wherein the door is hinged to a door frame on one side approximately perpendicular to a door edge, comprising:
 - (a) a channeled extension beam having a longitudinal

axis, a portion of said beam is adapted to fit over and removably engage a door edge and a remainder of said beam is adjacent to the frame, wherein the door is in the closed state; and

(b) a means for manually selectively rotatably clamping or unclamping said beam to the door edge, wherein the door has increased protection against unauthorized opening, thus placing the door into a more secured closed state, said means only manually selectively clamping or unclamping said beam from the door edge by applying an external manual force in conjunction with manual forward or manual reverse rotation respectively.

- [c10] 10. A door security apparatus according to claim 9 wherein said beam is constructed of materials selected from the group consisting essentially of polyethylene, polypropylene, and polyurethane materials.
- [c11] 11. A door security apparatus according to claim 9 wherein said means for manually selectively rotatably clamping or unclamping said beam to at least one door edge is constructed of materials selected from the group consisting essentially of polyethylene, polypropylene, and polyurethane materials.
- [c12] 12. A door security apparatus according to claim 9 further comprising a plurality of said means for manually

selectively rotatably clamping or unclamping said beam to the door edge.

[c13] 13. A door security apparatus according to claim 9 wherein said means for manually selectively rotatably clamping or unclamping said beam to the one door edge is a ratchet cap assembly having a threadable engagement with a beam externally threaded element adjacent to said beam with an aperture therethrough, said beam externally threaded element being substantially symmetric to a means rotational axis that is substantially perpendicular to the beam longitudinal axis, said ratchet cap assembly only having rotational axial movement along said threadable engagement with the application of the manual external force approximately parallel to the rotational axis toward said beam, an extension member and a clamping member are both in slidable axial contact with said ratchet cap being disposed through said aperture therethrough and are operational to clamp and unclamp said beam to the door edge.

[c14] 14. A door security apparatus according to claim 13 wherein said ratchet cap assembly is constructed of a ratchet cap outer shell that has a rotationally releasably engagable interface with a ratchet cap insert, wherein said ratchet cap outer shell operationally accepts the manual external force and manual forward or manual re-

verse rotation and said ratchet cap insert having a threadable engagement with said beam externally threaded element with said ratchet cap insert being in slidable axial contact with said extension member and said clamping member.

[c15] 15. A door security apparatus according to claim 14 wherein said ratchet cap assembly rotationally releasably engagable interface between said ratchet cap outer shell and said ratchet cap insert is constructed of a plurality of radially positioned axial protrusions disposed within said ratchet cap outer shell, each said protrusion includes substantially parallel sides with one side for tightening and one side for loosening, said ratchet cap insert also includes a plurality of radially positioned axial nodes that are adjacent to said protrusions, each said node includes non parallel faces with a tightening face that is substantially parallel to said tightening side and a loosening face that forms an acute angle with said loosening side, said protrusions and nodes are operational to allow free rotational movement between said shell and insert without the application of the external manual force, also to allow forward tightening manual rotation resulting in rotational engagement between said shell and insert upon the manual application of a lower external manual force and to allow reverse loosening manual rotation resulting

in rotational engagement between said shell and insert upon the manual application of a higher manual external force.

- [c16] 16. A door security apparatus according to claim 9 wherein said means for manually selectively rotatably clamping or unclamping said beam to the door edge has indicia visibly disposed on said means that is operational to give instructions to a user for manually selectively rotatably clamping or unclamping said beam to at least one door edge.
- [c17] 17. A method of using a door security apparatus that is adapted to assist in retaining a pair of adjacent opposing doors having edges in a closed state, thereby to help protect against unauthorized opening of the doors by placing the doors into an open state, wherein the doors are hinged each on opposing door sides, with the door sides approximately perpendicular to the door edges, comprising the steps of:
 - (a) providing a door security apparatus that includes a channeled extension beam having a longitudinal axis, said beam is adapted to fit over and removably engage the pair of adjacent door edges that are in the closed state and a means for manually selectively rotatably clamping or unclamping said beam to at least one door edge, wherein the doors have increased protection

against unauthorized opening, thus placing the doors into a more secured closed state, said means only manually selectively clamping or unclamping said beam from the door edge by applying a manual external force in conjunction with manual forward or manual reverse rotation respectively;

- (b) placing said beam to engage the door edges;
- (c) positioning said beam by moving said beam substantially parallel to the longitudinal axis such that said means for manually selectively rotatably clamping said beam to the door edge is positioned adjacent to at least one door edge and a portion of said beam is engaged to the adjacent opposing door edge; and
- (d) rotating said means for manually selectively rotatably clamping or unclamping said beam to the door edge in forward manual rotation and applying a lower manual external force in conjunction with the forward manual rotation to manually selectively rotatably clamp said beam to the door edge, wherein the adjacent opposing doors are placed into a more secured closed state to help protect against unauthorized opening of the doors by placing the doors into the open state.

[c18] 18. A method of using a door security apparatus according to claim 17 further comprising a final step of rotating said means for manually selectively rotatably clamping or

unclamping said beam to the door edge in reverse manual rotation and applying a higher manual external force to said means in conjunction with the reverse manual rotation to release the door edge clamp of said beam to remove said door security apparatus from the doors, wherein the doors can be manually placed into the open state.

[c19] 19. A method of using a door security apparatus that is adapted to assist in retaining a door in a closed state, thereby to help protect against unauthorized opening of the door by placing the door into an open state, wherein the door is hinged to a door frame on one side approximately perpendicular to a door edge, comprising the steps of:

(a) providing a door security apparatus that includes a channeled extension beam having a longitudinal axis, a portion of said beam is adapted to fit over and removably engage the door edge, and a remainder of said beam is adjacent to the frame, wherein the door is in the closed state and a means for manually selectively rotatably clamping or unclamping said beam to the door edge, wherein the door has increased protection against unauthorized opening, thus placing the door into a more secured closed state, said means only manually selectively clamping or unclamping said beam from the door

edge by applying a manual external force in conjunction with manual forward or manual reverse rotation respectively;

- (b) placing said beam portion to engage the door edge and said beam remainder to be adjacent to the frame;
- (c) positioning said beam by moving said beam substantially parallel to the longitudinal axis such that said means for manually selectively rotatably clamping said beam to the door edge is positioned adjacent to the door edge and said remainder of said beam is adjacent to the frame; and
- (d) rotating said means for manually selectively rotatably clamping or unclamping said beam to the door edge in manual forward rotation and applying a lower manual external force in conjunction with the forward manual rotation to manually selectively rotatably clamp said beam to the door edge, wherein the door is placed into a more secured closed state to help protect against unauthorized opening of the door by placing the door into the open state.

[c20] 20. A method of using a door security apparatus according to claim 19 further comprising a final step of rotating said means for manually selectively rotatably clamping or unclamping said beam to the door edge in reverse manual rotation and applying a higher manual external force

to said means in conjunction with the reverse manual rotation to release the door edge clamp of said beam to remove said door security apparatus from the door, wherein the door can be manually placed into the open state.